

**MNL-10RXX
MNL-15RXX
MNL-20RXX**

I/A Series®

MicroNet LONMARK® 100, 150, and 200 Series Controllers

The I/A Series MicroNet LONMARK 100, 150, and 200 Series Controllers (MN 100, MN 150, and MN 200) are interoperable, LONMARK-certified controllers. When programmed using WorkPlace Tech Tool, or loaded with a pre-engineered application, these controllers provide control for packaged rooftops, heat pumps, fan coils, unit ventilators, and similar applications. Controllers feature Sensor Link (S-Link) support, LED indication, screw terminal blocks, as well as DIN rail or panel mounting ability. These controllers can function in either standalone mode or as part of a LONWORKS® FTT-10 Free Topology communications network.

The 100, 150, and 200 series controllers use the same physical packaging, but differ in the onboard I/O points they provide.

Applications

Designed for new or existing system installations, the MN 100, 150, and 200 controllers provide control for:

- Unit Ventilators
- Heat Pumps
- Fan Coils
- Packaged Rooftops

Connectivity

Controllers offer the advantages of standalone and networked control. Using an I/A Series MicroNet Sensor (MN-SX series), the operator can monitor controller performance and edit operational values. The WorkPlace Tech Tool software is used to program the controllers.



Features —

- Field programmable using WorkPlace Tech Tool.
- Uses LONMARK HVAC profiles for interoperability.
- Capability to function in standalone mode or as part of a LONWORKS FTT-10 Free Topology communications network.
- Multiple controllers on a LonWorks FTT network creates a complex network of controllers for virtually any building control needs.
- Proportional (P), Proportional Plus Integral (PI), and Proportional Plus Integral and Derivative (PID) control for cooling and heating.
- The satellite profile allows the controller to be used in a broad range of applications, providing solutions to your building control needs.
- Onboard LED indication without cover removal.
- Plenum-rated enclosure allows direct mounting in plenum.
- Protective hinged covers provide access to field wiring terminals.



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Model Chart

Model	Description	Inputs/Outputs	Profiles
MNL-10RXX ^a	I/A Series MicroNet LONMARK 100 Series Controller	1 Digital Input (DI)	<ul style="list-style-type: none"> • Heat Pump • Fan Coil • Packaged Rooftop • Satellite
		2 Universal Inputs (UI)	
		4 Digital Outputs (DO)	
MNL-15RXX ^a	I/A Series MicroNet LONMARK 150 Series Controller	3 Universal Inputs (UI)	<ul style="list-style-type: none"> • Heat Pump • Fan Coil • Packaged Rooftop • Satellite
		2 Digital Outputs (DO)	
		2 Analog Outputs (AO)	
MNL-20RXX ^a	I/A Series MicroNet LONMARK 200 Series Controller	2 Digital Inputs (DI)	<ul style="list-style-type: none"> • Heat Pump • Fan Coil • Packaged Rooftop • Satellite
		3 Universal Inputs (UI)	
		6 Digital Outputs (DO)	
		2 Analog Outputs (AO)	

^a XX denotes LONMARK profile and profile version (F=Fan Coil, H=Heat Pump, R=Rooftop, S=Satellite).
Satellite profile is based on Roof top profile.

Hardware Specifications

Dimensions 4 5/16" high x 4 3/8" wide x 2" deep
(109 mm x 111 mm x 51 mm).

Enclosure Conforms to NEMA-1 requirements.
Meets UL94-5V flammability for plenum application use.

Conduit Knockouts Not applicable. Order optional MicroNet Enclosure, MNA-FLO-1, if wiring to flexible conduit is desired.

Power Supply Input 20.4 to 30 Vac, 50/60 Hz.

Maximum Power Consumption 15 VA @ 24 Vac, 50/60 Hz, excluding relay output power.

Surge Immunity Compliance
ANSI C62.41 (IEEE-587, Category A & B).

Agency Listings

FCC, Class B.

UL Listed

UL-916 (File # E71385 Category PAZX).

UL Listed to Canadian Safety Standards (CAN/CSA C22.2).

European Community – EMC Directive

Emissions EN50081-1.

Immunity EN50082-1.

Mounting 35 mm DIN rail or panel.

Ambient Limits Operating Temperature -40 to 140 °F
(-40 to 60 °C).

Shipping and Storage Temperature -40 to 160 °F
(-40 to 71 °C).

Humidity 5 to 95% RH, non-condensing.

Wiring Terminals Screw terminals.

AWG #16 to #24 (1.5 mm² maximum) wire.

Inputs (from I/A Series MicroNet Sensors)

Space Temperature 32 to 122 °F (0 to 50 °C).

Adjustable Setpoints 40 to 95 °F (4.4 to 35 °C).

Operational Mode Heat/Cool/Auto/Off.

Fan Off/On/Speed (Low/Medium/High)/Auto.

Emergency Heat

Override Pushbutton For standalone occupancy control or remote status monitoring of local status condition.

Digital Inputs (MN 100 and MN 200 only) Dry Contact.
Detection of closed switch requires less than 300 Ω. Detection of open switch requires more than 100K Ω.

Digital Outputs

Current Ratings 24 VA at 24 Vac, pilot duty.

Universal Inputs

1KΩ Balco Input -40 to 250 °F (-40 to 121°C) range.
TS-8000 Series or equivalent.

1KΩ Platinum Input -40 to 240 °F (-40 to 116 °C) range.
TS-58000 Series or equivalent.

1k Resistance 0 to 1.5k ohms.

10KΩ Thermistor w/ 11KΩ Shunt Resistor -40 to 250 °F
(-40 to 121 °C) range. TS-5700-850 or equivalent.

10k Resistance 0 to 10.5k ohms.

Voltage 0 to 5 Vdc.

Current 0 to 20 mA requires an external 250 Ω shunt resistor.

Digital Input Dry Contact. Detection of closed switch requires less than 300 Ω. Detection of open switch requires more than 1.5K Ω.

Analog Outputs (MN 150 and MN 200 only)

Current 0 to 20 mA. (Output load from 80 to 550Ω).

Software Capabilities

- Allows design of a complete custom application for each controller.
- LONMARK-compatible.
- WorkPlace Tech Tool is capable of reconfiguring and editing application configuration data.
- HVAC interoperability achieved through use of LONMARK HVAC profiles.
- All controllers are field programmable, but controllers with satellite profiles are especially suited for a broad range of applications, providing solutions to your building control needs.

Communications

LONWORKS Networks A LONWORKS communications network uses an FTT-10 Free Topology configuration. Controllers on a LONWORKS network can communicate with each other in a peer-to-peer fashion, and connect to the WorkPlace Tech Tool software platforms via the LON Jack on any LonMark controller or on any MN-Sx sensor. The wall sensor must be connected to the LON network. A LONWORKS network has a communications speed of 78k baud, using unshielded, twisted-pair cabling.

S-Link A Sensor Link (S-Link) communications wiring provides power and communication interface to the I/A Series MicroNet sensor (MN-SX series). It uses two-wire, unshielded cable and is not polarity sensitive. From some sensor models, the user can view and adjust application parameters. Maximum wire length allowed between a controller and the I/A Series MicroNet Sensor is 200 ft. (61 m).

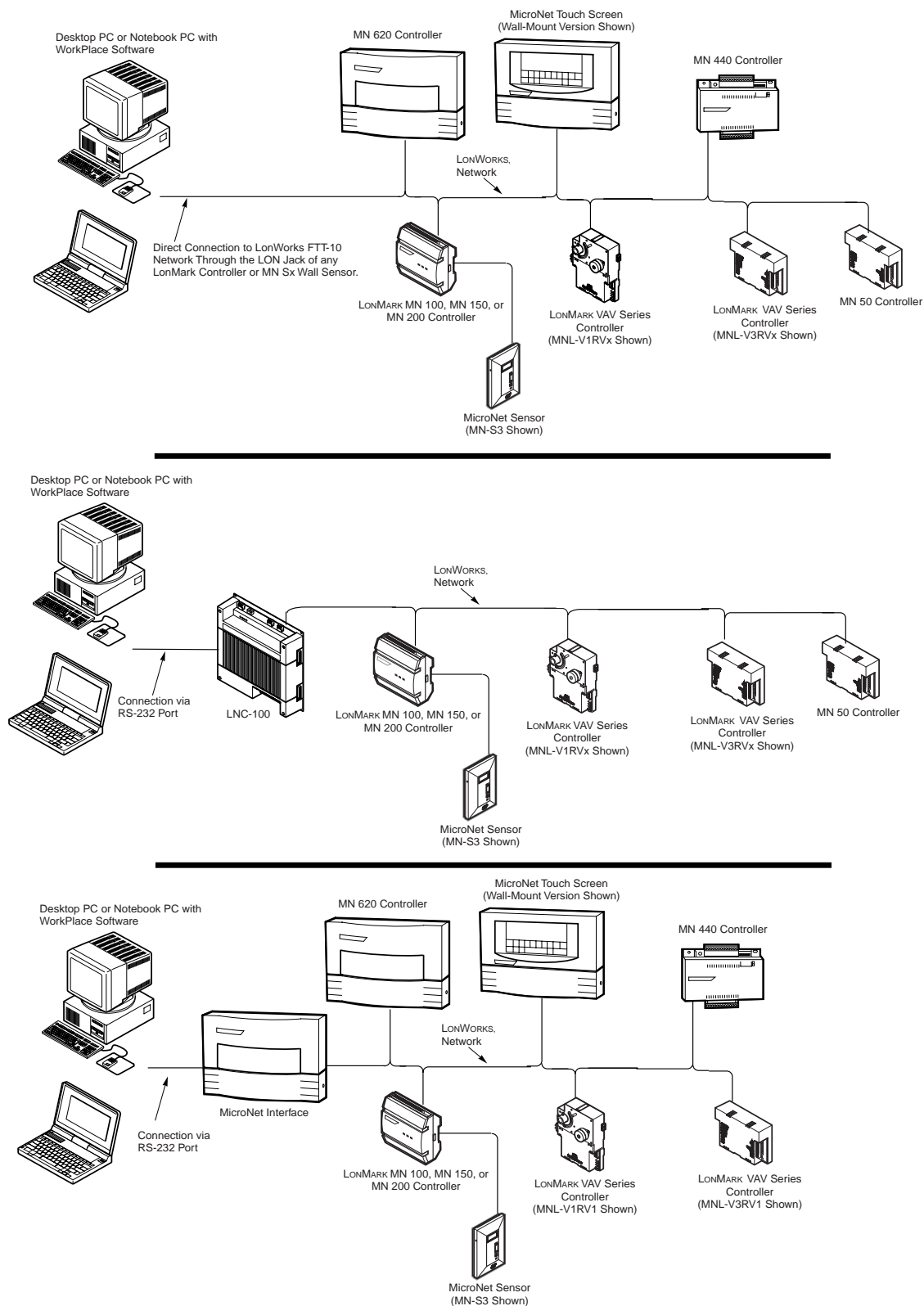


Figure-1 I/A Series MicroNet LonMark 100, 150, and 200 Series Controller Connectivity.

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